PACIFIC GAS AND ELECTRIC COMPANY
HUNTERS POINT POWER PLANT
PLANT 24
BANKING APPLICATION #14855

Introduction

Pacific Gas and Electric Company (PG&E) has applied for Emission Reduction Credits (ERCs) for the following equipment:

S#	Description	Make or Type	Model	Capacity
S1	Gas Turbine Unit No. 1 - Engine "A" with water injection; Distillate Oil Fired	Turbo Power and Marine Systems	FT4C-1D/LF	26 MW 2600 gal/hr 356 MMbtu/hr
S2	Gas Turbine Unit No. 1 - Engine "B" with water injection; Distillate Oil Fired	Turbo Power and Marine Systems	FT4C-1D/LF	26 MW 2600 gal/hr 356 MMbtu/hr
S7	Boiler No. 7 - Electric Generation; Gas Fired	Combustion Engineering	Type R	1,720 MMBTU/hr

The above three sources (S-1, S-2, S-7) at the Hunters Point Power Plant (Plant #24) have been permanently shutdown due to closure of the plant. These sources were permanently shutdown on May 15, 2006. The Title V permit for this facility has been cancelled since it is no longer a major facility.

PG&E has requested the following emissions reductions credit:

Emission Reduction Credits Requested (tons/year)

	NOx	CO	POC	SO2	PM10
S-1 and S-2	7.34	3.41	0.02	1.05	0.54
S-7	50.86	12.83	15.24	1.70	21.05
Total	58.20	16.24	15.26	2.75	21.59

Emissions

Per Regulation 2-2-605

2-2-605 Emission Calculation Procedures, Emission Reduction Credits: The following methodology shall be used to calculate emission reduction credits.

605.1 The baseline period consists of the 3 year period immediately preceding the

date that the application is complete (or shorter period if the source is less than 3 years old). The applicant must have sufficient verifiable records of the source's operation to substantiate the emission rate and throughput during the entire baseline period.

605.2 Baseline throughput is the lesser of:
2.1 actual average throughput during the baseline period; or
2.2 average permitted throughput during the baseline period, if limited by permit condition.

605.3 Baseline emission rate, expressed in the units of mass of emissions per unit of throughput, is the average actual emission rate during the baseline period. Periods where the actual emission rate exceeded regulatory or permitted limits shall be excluded from the average.

605.4 Baseline Throughput and Emission Rate - Fully Offset Source: For a source which has, contained in a permit condition, an emission cap or emission rate which has been fully offset by the facility (without using emission reductions from the Small Facility Banking Account), the baseline throughput and baseline emission rate shall be based on the levels allowed by the permit condition.

605.5 The adjusted baseline emission rate shall be determined by adjusting the baseline emission rate downward, if necessary, to comply with the most stringent of RACT, BARCT, and District rules and regulations in effect or contained in the most recently adopted Clean Air Plan.

605.6 Emission reduction credits shall be the difference between the adjusted baseline emission rate times the baseline throughput, and the emission cap or emission rate accepted by the applicant as a federally enforceable limiting conditions.

(Amended 6/15/94; 5/17/00)

All fees were paid on June 30, 2006 and the application was deemed complete. As a result, the 3-year baseline period is July 2003 to June 2006. The applicant had provided sufficient verifiable records of the source's operation to substantiate the emission rate and throughput during the entire baseline period.

S-1 and S-2 Gas Turbines

S-1 and S-2 Oxides of Nitrogen (NOx) Credits

The actual NOx emissions for the 3-year baseline period (July 2003 to June 2006) are 9.43 tons/year, as shown in Appendix A. The NOx emissions factor came from a source test conducted by TES on December 18, 1996 to demonstrate compliance with the then new 65 ppmv NOx limit. The test results demonstrated compliance at 54 ppmv (0.21 lb NOx/MMBtu) for S-1 and 57 ppmv (0.22 lb NOx/MMBtu) for S-2. Since the two gas turbines emitted NOx at nearly the same emission rates, the lower reading was used to calculate the actual emissions from the two gas turbines.

BARCT Adjustment

The S-1 and S-2 Gas Turbines are regulated under Regulation 9, Rule 9 as amended on December 6, 2006. The regulatory standard for these two peaking turbines (S-1 and S-2), which are limited to no more than 877 hours of operation per year, is:

9-9-302 Emission Limits, Low Usage:

302.1 Until January 1, 2010, or other date provided under a compliance schedule pursuant to Section 9-9-402.2, a person may operate a stationary gas turbine for up to 877 hours in any 12-month period (not counting hours of emergency use) without complying with the emission limits Section 9-9-301 as long as nitrogen oxides (NOx) emission concentrations, corrected to 15 percent O2 (dry basis), do not exceed 42 ppmv when firing with natural gas and 65 ppmv when firing with non-gaseous fuel, and the requirements of Section 9-9-502 are satisfied.

302.2 Effective January 1, 2010, a person may operate a stationary gas turbine rated at 50 MMBtu/hr or greater for up to 877 hours in any 12-month period (not counting hours of emergency use) without complying with the emission limits set forth in Section 9-9-301 as long as nitrogen oxides (NOx) emissions, corrected to 15 percent O2 (dry basis), are less than either of the of the alternative limits listed below for the turbine's heat input rating and the type of fuel burned, and the requirements of Section 9-9-502 are satisfied:

Turbine Heat Input Rating	**Natural Gas**	**Refinery Fuel Gas, Waste Gas or LPG**	**Non-gaseous Fuel**
> 250 – 500 MMBtu/hr (19 – 40 MW)	1.17 lbs/MWhr or 25 ppmv	N/A	1.97 lbs/MWhr or 42 ppmv

Because the regulation requires that the Gas Turbines (S-1 and S-2) meet 42 ppmv effective January 1, 2010, the NOx emissions from the two gas turbines were adjusted to comply with the new BARCT standard. The allowable NOx emissions due to compliance with the newly amended Regulation 9, Rule 9 are 7.335 tons/year. See Appendix A. No other adjustments are necessary to meet local, state or federal requirements. The NOx credit is 7.335 tons.

S-1 and S-2 Carbon Monoxide (CO) Credits

The emission factor for determining any allowable CO credit for the S-1 and S-2 Gas Turbines came from:

> EPA AP-42, April 2000, Table 3.1-1 "Emission Factors for Nitrogen Oxides (NOx) and Carbon Monoxide (CO) from Stationary Gas Turbines".

The emission factor for water steam injection is 0.076 lb/MMBTU. The monthly readings for the 3-year baseline using this emissions factor are shown in Appendix A. The annual average CO emissions measured over this baseline period were 3.41 tons/year. Regulation 9, Rule 9 does not contain a CO limitation. No adjustment for any stricter local, state or federal requirement, per Regulation 2-2-605.5, is needed.

S-1 and S-2 Precursor Organic Compound (POC) Credits

The emission factor for determining any allowable POC credit for the S-7 Boiler came from:

> EPA AP-42, April 2000, Table 3.1-2a "Emission Factors for Criteria Pollutants and Greenhouse Gases from Stationary Gas Turbines"

The emission factor is 0.00041 lb/MMBTU. The monthly readings for the 3-year baseline using this emissions factor are shown in Appendix A. The annual average POC emissions measured over this baseline period were 0.02 ton/year. No adjustment for any stricter local, state or federal requirement, per Regulation 2-2-605.5, is needed.

S-1 and S-2 Sulfur Dioxide (SO_2) Credits

The sulfur content is 0.023%, by weight, is based on supplier's specifications and laboratory analyses. The sulfur limit in the fuel oil is 0.5%, by weight. As shown in Appendix A, the emissions factor used is in pounds per barrel (bbl) where a barrel is equal to 42 gallons. The SO2 emissions factor of 0.1362 lb/ab was determined as follows:

Lb/ab = 42 gal/bbl x 7.05 lbs/gal x 64/32 (SO2/S) x .00023 S
= 0.1362

The annual average SO_2 emissions measured over this baseline period were 1.05 tons/year. No adjustment for any stricter local, state or federal requirement, per Regulation 2-2-605.5, is needed.

S-1 and S-2 Particulate Matter (PM10) Credits

The emission factor for determining any allowable PM10 credit for the S-1 and S-2 Gas Turbines came from:

> EPA AP-42, April 2000, Table 3.1-2a "Emission Factors for Criteria Pollutants and Greenhouse Gases from Stationary Gas Turbines"

The emission factor is 0.012 lb/MMBTU. The monthly readings for the 3-year baseline using this emissions factor are shown in Appendix A. The annual average PM10 emissions measured over this baseline period were 0.54 ton/year. No adjustment for any stricter local, state or federal requirement, per Regulation 2-2-605.5, is needed.

S-7 Boiler

S-7 Oxides of Nitrogen (NOx) Credits:

The S-7 boiler is regulated under Regulation 9, Rule 11. PG&E has elected to use Interchangeable Emissions Reduction Credits (IERCs) as allowed by Regulation 2, Rule 9 to comply with the NOx standard of 0.018 lb/MMbtu specified in Section 9-11-309.1. To show compliance with Rule 9-11, the owner/operator kept a spreadsheet in a District approved format. The spreadsheet included a running balance of both IERCs consumed and IERCs remaining for each month, actual hourly heat input in million BTU, actual NOx (as NO_2) emissions rates per hour, and allowable NOx (as NO_2) emissions rates based on the prevailing Regulation 9-11 limit. The current limit is 0.018 lb/MMBTU which became effective in 2005.

The owner/operator operated a continuous emission monitor (CEM) to measure the NOx emissions. The monthly readings for the 3-year baseline period are shown in Appendix A. The annual average NOx emissions measured over this baseline period were 94.77 tons/year.

IERC Adjustment

The source has met the Best Available Retrofit Control Technology (BARCT) requirement through the use of IERCs. Per Regulation 2-2-605.5, the actual emissions must be adjusted for BARCT. After adjusting the actual emissions to meet the BARCT standard of 0.018 lb/MMBTU without IERCs, the annual average NOx emissions are 50.86 tons/year, as shown in Appendix A. No other adjustments are necessary to meet local, state or federal requirements. The NOx credit is 50.86 tons.

S-7 Carbon Monoxide (CO) Credits:

The owner/operator operated a continuous emission monitor (CEM) to measure the CO emissions. The monthly readings for the 3-year baseline period are shown in Appendix A. The total CO emissions measured over this baseline period were 12.83 tons. The facility has not been found to be in violation of the following CO limit:

> **Section 9-11-310.2** During normal operation (CEMS compliance monitoring), carbon monoxide (CO) shall not exceed 1000 ppmv, dry at 3 percent oxygen, based on a clock hour average. (Amended November 15, 1995)

No adjustment for any stricter local, state or federal requirement, per Regulation 2-2-605.5, is needed.

S-7 Precursor Organic Compound (POC) Credits

The emission factor for determining any allowable POC credit for the S-7 Boiler came from:

> EPA AP-42, July 1998, Table 1.4.2 "Emission Factors for Criteria Pollutants and Greenhouse Gases from Natural Gas Combustion"

The emission factor is 0.00539 lb/MMBTU (5.5 lb/MMscf in AP-42 divided 1020 Btu/hour). The monthly emissions for the 3-year baseline using this emissions factor are shown in Appendix A. The annual average POC emissions measured over this baseline period were 15.24 tons/year. No adjustment for any stricter local, state or federal requirement, per Regulation 2-2-605.5, is needed.

S-7 Sulfur Dioxide (SO_2) Credits

The emission factor for determining any allowable SO_2 credit for the S-7 Boiler came from:

> EPA AP-42, July 1998 version, Table 1.4.2 "Emission Factors for Criteria Pollutants and Greenhouse Gases from Natural Gas Combustion"

The emission factor is 0.0006 lb/MMBTU (0.6 lb/MMscf in AP-42 divided 1020 Btu/hour). The monthly emissions for the 3-year baseline using this emissions factor are shown in Appendix A. The annual average SO_2 emissions measured over this baseline period were 1.7 tons/year. No adjustment for any stricter local, state or federal requirement, per Regulation 2-2-605.5, is needed.

S-7 Particulate Matter (PM10) Credits

The emission factor for determining any allowable PM10 credit for the S-7 Boiler came from:

> EPA AP-42, July 1998 version, Table 1.4.2 "Emission Factors for Criteria Pollutants and Greenhouse Gases from Natural Gas Combustion"

The emission factor is 0.00745 lb/MMBTU (7.6 lb/MMscf in AP-42 divided 1020 Btu/hour). The monthly emissions for the 3-year baseline using this emissions factor are shown in Appendix A. The annual average PM10 emissions measured over this baseline period were 21.05 tons/year. No adjustment for any stricter local, state or federal requirement, per Regulation 2-2-605.5, is needed.

Summary of Emission Reduction Credits

Emission Reduction Credits (tons/year)

	NOx	CO	POC	SO2	PM10
S-1 and S-2	7.34	3.41	0.02	1.05	0.54
S-7	50.86	12.83	15.24	1.70	21.05
Total	58.20	16.24	15.26	2.75	21.59

Statement of Compliance

Per the June 29, 2006 letter from PG&E, the Hunters Point Power Plant operated by PG&E informed the District that sources S-1, S-2 and S-7 were permanently shutdown on May 15, 2006. Hence, in accordance with Regulation 2-4-302:

2-4-302 **Bankable Reductions for Closures:** Emission reduction credits not prohibited by Section 2-4-303 is bankable. The following restrictions apply:

302.1 Closure of sources, where the reduction is permanent at the source, but it is unclear whether the reduction will be replaced by an emissions increase elsewhere within the District, are bankable only if the applicant accepts a condition restricting use of the deposits to offsetting emission increases in the same or closely related industries. For example, the closure of public utility power generation facilities could be bankable if use is restricted to offsetting emission increases from other power generation facilities (including resource recovery and cogeneration facilities). Closure of petroleum or petroleum product storage tanks at refineries could be bankable if use is restricted to offsetting emission increases at other petroleum or petroleum products storage tanks, or to offset emission increases at the associated refinery.

302.2 Issuance of a Banking Certificate for emission reductions resulting from a closure cancels the permit to operate. The reduction shall be enforceable through a condition in the Banking Certificate and through enforcement of Regulation 2-1-302 pertaining to operating without a permit.

302.3 The permanency of closures shall be demonstrated through removal of the source from the District, rendering it inoperative, destruction of the source, or by inclusion of appropriate conditions in the Banking Certificate providing for automatic cancellation of the Banking Certificate if emissions resume and replacement by the applicant of the emission reduction credit if the deposit has been transferred or withdrawn.

(Amended 7/17/91; 6/15/94; 5/17/00)

A banking certificate can be issued to PG&E because the emission reduction is permanent.

CEQA

This application is considered exempt from the California Environmental Quality Act per the following regulation:

Regulation 2-1- 312.10 Applications to deposit emission reductions in the emissions bank pursuant to Regulation 2, Rule 4 or Regulation 2, Rule 9.

Public Notice

Before approving the banking of any emission reduction in excess of 40 tons per year of any pollutant, the APCO shall cause to be published in at least one newspaper of general circulation within the District, and be sent to any individual submitting a written request to the APCO for notification, a notice stating the preliminary decision of the APCO to approve the banking of emission reductions [Regulation 2-4-405]. The proposed banking credit for NOx emissions is 58.2 tons/year, which exceeds the 40 tons per year threshold. Therefore, pursuant to Regulation 2-4-405, the District will public notice in the San Francisco Chronicle the preliminary decision by the APCO to grant the below banking credits to PG&E due to the shutdown of the Hunter's Point Power Plant. Letters will also be sent to EPA, CARB, San Joaquin Valley Unified APCD and the applicant informing them of this preliminary decision.

Emission Reduction Credits Allowed (tons/year)

	NOx	**CO**	**POC**	**SO2**	**PM10**
S-1 and S-2	7.34	3.41	0.02	1.05	0.54
S-7	50.86	12.83	15.24	1.70	21.05
Total	58.20	16.24	15.26	2.75	21.59

Condition

- These emission reduction credits shall only be used to offset emission increases from other power generation facilities (including resource recovery and cogeneration facilities). (Basis: Regulation 2-4-302.1)

Recommendation

I recommend that PG&E be issued a conditional banking certificate for the following total amounts, specified for each pollutant in the table below, due to the permanent shutdown of the Hunters Point Power Plant:

Emission Reduction Credits Allowed (tons/year)

	NOx	**CO**	**POC**	**SO2**	**PM10**
S-1 and S-2	7.34	3.41	0.02	1.05	0.54
S-7	50.86	12.83	15.24	1.70	21.05
Total	58.20	16.24	15.26	2.75	21.59

Name: Signed by Douglas W. Hall **Date: July 12, 2007**
Douglas W. Hall
Supervising Air Quality Engineer